



Lake Michigan States Section Air & Waste Management Association Newsletter[®]

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It's TRI'in' Time Again... The Toxic Release Inventory's Annual Due Date is Almost Here...

by
Jeffrey Wentz
Senior Scientist
Baker Environmental, Inc.

The annual Toxic Release Inventory (TRI) reports have become a rite of passage into the summer - but this year there is a new obligation that will require more companies to report the lead they use and release to the environment.

On January 17, 2001, in the final days of the Clinton administration, the USEPA issued a new rule under the Emergency Planning and Community Right-to-Know Act (EPCRA). This rule designated lead and lead-compounds as "Persistent, Bio-accumulative, Toxic" (PBT) chemicals, which lowered their TRI reporting threshold from 25,000 lbs. processed or 10,000 lbs. used, down to **100 lbs. processed or used**. The Bush administration delayed the rule for 90 days, but finally proceeded with it on April 17, 2001. The new requirement is in effect for the year 2001 Report, due July 1, 2002.

The new, lower reporting thresholds apply to lead and lead compounds, except for those contained in "qualified alloys," i.e., stainless steel, brass, and bronze alloys. The reporting thresholds for lead in those materials remain at the previous 25,000 lbs. and 10,000 lb. levels.

To determine whether your facility has to report, you need to apply the standard, three-part EPCRA 313 applicability test. Your facility has to report if it meets **all three** criteria:

1. The facility is in SIC codes 10 (except 1011, 1081, and 1094), 12 (except 1241), 20 through 39, 4931, 4939, 4953, 5169, 5171, or 7389; **and**,



New Members

Roy Ball
Environ

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Jim Breitenbach
Pharmacia

Charles Busch

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Michael Carlton
von Briesen & Roper, s.c.

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Lou De Rose
Cook County Environmental Control

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Pao Wen Liu
Wisconsin Department of Natural Resources

Garrick Milkeris
Hygieneering, Inc.

Thomas Petri
Milwaukee Metro Sewerage District

Scott Plummer
ADAC Plastics, Inc.

John Robbins
Abbott Laboratories

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Volunteer Activities

LM-A&WMA MEMBERSHIP BULLETIN BOARD



The LM-A&WMA Section is seeking **volunteers** to participate in the following activities:

Environmental Issues Writers: Our LM-A&WMA Board Secretary, Bob Wells, is always looking for talented writers to contribute articles on current environmental issues to the quarterly Lake Michigan States Section Newsletter. If you have interesting information to share from industry, government, academia or consulting, please feel free to contact **Bob Wells** at 630-462-6864 or wellsrobertc@earthlink.net.

Open Board Meetings: If you are an interested LM-A&WMA member and would like to get your feet wet, or if you would like to present an issue or idea to our Board, come and attend one of our open Board meetings. Contact LM-A&WMA's Administrative Assistant, **Robin Pelsis**, at 847-202-0418 to find the date and location of the next Board meeting, or to be placed on the meeting agenda.

LM-A&WMA Advisory Committee: Our Section formed an Advisory Committee for our members who have demonstrated exceptional commitment by being actively involved with the A&WMA Board and its conference planning activities. Our Advisory Committee Members have been appointed by our Board and we hope that they will become future Board Members. If you are a person who has demonstrated such commitment or would like to learn how to become actively involved, please contact our LM-A&WMA Board Chair, **Eric Boyd**, at 312-269-8903.

Teacher Training Workshops: We are actively seeking volunteers to run training workshops on air quality and pollution prevention topics for elementary and high school teachers as a way to increase their knowledge of environmental sciences. No experience necessary; we will train. For more information, contact **Mark Roach** at 847-991-6200 x2099.

LM-A&WMA Student Chapter: A student chapter has been formed at the Illinois Institute of Technology [IIT] and is open to students affiliated with the IIT Chicago Kent College of Law, School of Environmental Engineering and the Stuart School of Business. If you are interested in becoming active in the Student Chapter, please contact LM-A&WMA Membership Chair, **Bill Forcade**, at 312-923-2964.

*NOTE: If you are a member and have any volunteer activities that you would like to post in our newsletter, please contact **Bob Wells** at 630-462-6864 or wellsrobertc@earthlink.net.*

LM-A&WMA Calendar of Events

At the recent Annual Planning Meeting the LM-A&WMA Board of Directors developed the following preliminary Calendar of Events for the upcoming year. This schedule promises to provide for an exciting year for the organization with many current issues being addressed. Please feel free to contact **Diana Jagiella** at (309) 999-6309 or djagiella@howardandhoward.com if you wish to participate in the development of any of these programs, or if you have a suggestion for an additional topic. Board of Director meetings are open to all members. Please contact Robin Pelsis at (847) 202-0418 or lm_awma@ameritech.net if you need directions to a Board meeting.

June 11	Board of Directors Meeting R. R. Donnelley, Downers Grove 4:00 p.m.	October	Annual Air Conference Primer Location and date to be determined 7:00 p.m.
July 16	Board of Directors Meeting Baker Environmental, Chicago 4:00 p.m.	October	Annual Air Conference Location and date to be determined 8:00 a.m. - 6:00 p.m.
August 13	Board of Directors Meeting Boelter & Yates, Park Ridge 8:00 a.m.	November	Do-It-Yourself EMS Half-day seminar Location and date to be determined
August	Federally Permitted Release Seminar Breakfast Meeting Location and date to be determined	December	Holiday Reception IIT Stuart School of Business 5:00 p.m.
September	Tour - Chicago Green Center Date to be determined		

Graduate School Opportunity for Working Professionals



The Milwaukee School of Engineering is a 99 year old university located in Milwaukee, Wisconsin, known for a tradition of excellence in engineering and business education. We would like to make you aware of our Masters of Science in Environmental Engineering (MSEV) program. This program, began in 1995, offers to working professionals the opportunity to earn a masters of science degree in Environmental Engineering, while attending part-time. Other features include:

- **All classes offered in the evenings, to accommodate working adults**
- **Curriculum consists of applied environmental engineering and environmental management content**
- **Faculty consists of practitioners in the environmental field, emphasizing applied engineering and management skills**
- **Small class sizes, with the opportunity to network with other working professionals.**
- **90+ % placement rates**

For more information, contact the MSEV Program Director, Dr. Frank Mahuta at ahuta@msoe.edu or at (414) 277-7599, or visit our website at <http://www.msoe.edu/grad/msev/>

MACT Update

by Robert Wells
Consultant

Introduction

There has been much activity lately in developing emission standards for Maximum Achievable Control Technology (MACT) control of hazardous air pollutants (HAPs) under the Clean Air Act Amendments of 1990 (CAAA). MACT standards were to have been developed by the U.S. Environmental Protection Agency (USEPA) for a large number of source categories by November 15, 2000, which is ten years after the passage of the CAAA. Numerous standards have been established, but the overall deadline for issuance of all MACT standards was missed. This missed deadline, coupled with the inherent complexity of the program, has resulted in a flurry of recent activity.

Setting MACT standards is a three-part process for USEPA. First, source categories are identified and listed. Second, the agency evaluates existing sources in each category to define the current level of control, and proposes standards on that basis. MACT standards must be proposed for new sources based on at least the best-controlled existing source, and for existing sources based on the “average” of the top 12 percent of existing sources (with allowances for small source categories). This is the so-called “MACT floor.” USEPA can propose more stringent standards if it determines that a higher level of control is appropriate. Third, the agency takes comments from the public, including the affected industry, and establishes standards. The complexity of standard-setting

varies with the underlying complexity of the source category.

The MACT Hammer

The current level of activity has been prompted by section 112(j) of the CAAA, which is termed the “MACT Hammer.” Section 112(j) requires that if USEPA fails to establish a MACT standard for a source category by a program deadline, then the states must make determinations and issue permits for each source in the category. The applicable deadline for the final group of MACT standards is November 15, 2000. However, the standards are not officially late until 18 months after the deadline. Therefore, *the MACT Hammer deadline was May 15, 2002.*

USEPA regulations for what has to happen on and after the hammer deadline were originally issued May 20, 1994 (59 FR 26429) and codified at 40 CFR 63.50, et. seq. Significant revisions to this regulation were issued April 5, 2002 (67 FR 16582), effective immediately, and these are the regulations of immediate concern.

Under the 2002 Section 112(j) amendments, the owner or operator of a source was to have submitted a “Part 1” application by May 15, 2002, which requires “very basic information” (Preamble section IV(A), 67 FR 16591). However, the source owner was still left with the not-insignificant task of deciding whether or not a late MACT standard would ultimately apply to them, and which *emission points* would be affected. If in doubt, the

owner had the option to submit an application requesting an applicability determination from the state (not USEPA). A more extensive “Part 2” application is due 24 months after submittal of the Part 1 application. States must issue Title V permits or permit revisions reflecting MACT 18 months after receipt of the submittal of a complete Part 2 application, or generally 3½ years after the hammer date.

USEPA’s intent is to defer detailed permitting under the MACT Hammer until all standards have been written, so that it will not be required. Notably, USEPA declined to identify the economic impact of the Part 2 application (on industry) and permit review (on states), because they “... plan to promulgate all the 10-year MACT standards before the need to submit a Part 2 permit application” (Preamble section V, 67 FR 16593).

Recent Standard-setting Activity

Not surprisingly, the MACT Hammer is having its desired effect on the issuance of standards. As of May 19, 2002, USEPA had filed seven proposed standards and five final standards (including three proposed/direct final) in 2002 alone, compared with an average of five to six final rules per year since the first MACT standard was issued in 1993. Proposed rules were filed in 2002 for:

- Semiconductor Manufacturing,
- Engine Test Cells/Stands,

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Environmental Controls: Clean, Green Manufacturing

As EISENMANN Corp. has learned, teamwork, flexibility and an open mind are key to achieving ISO 14001 certification.

*By Michelle Domico and Jean Marie Saidler, Freelance Writers
Reprinted with permission of Eisenmann Corp.*

The steady stream of manufacturers achieving ISO 14001 certification is quickly changing the business landscape around the world. Firms are beginning to realize that hanging the ISO 14001 shingle on the plant logo will benefit the corporate bottom line, as well as the environment. While some might see ISO 14001 as a cost for conserving the environment, savvy manufacturers see it as an investment to reduce operating costs.

EISENMANN Corp., a kiln manufacturer in northwest suburban Chicago, is one such company. It recently completed its ISO 14001 pre-assessment audit with very satisfactory marks and was expected to complete its registration audit in January. The firm's quality and environmental assurance manager, John Swartz, said that EISENMANN had always complied with the 14001 standards, but hadn't committed the time or staff involvement to document its compliance. "The company has a long-standing history of being a corporate maverick on environmental issues," Swartz said. "EISENMANN created state-of-the-art manufacturing processes to recapture and recycle natural resources long before it was in vogue."

The movement to achieve certification was hastened when the Big Three automakers began telling

suppliers: "Follow our lead—get 14001 certified."

"Ford is really taking the big step forward," said Swartz. "They are mandating that all of their tier-one suppliers become registered to 14001. Fortunately for us, we're compliant to the standard. We've established a long-standing industry record of operating a clean and green facility. We didn't have to make any investments to be environmentally responsible. We simply needed to invest the time to put all our documentation together."

Swartz said that EISENMANN chose a team approach to certification, with members as varied as the sales and engineering staff to sheet metal workers participating in the program. Bringing in consultants to take on the task was an option, but Swartz said that EISENMANN recognized in the early stages the value of training and staff involvement. "It's got to be a team effort. By obtaining the requisite training, helping document our processes and seeing up close how EISENMANN's operations impact the environment, the employees have begun to understand the goals we're trying to achieve." He added, "They're signing onto ISO 14001, and understanding what it takes to meet those goals day in and day out."

Taking Advantage of Teamwork
Depending on a firm's corporate

personality, the ISO documentation model may be viewed as a blessing or a curse. The standard has no forms to fill out or multiple-choice questions to answer. Each establishment is given the freedom to "do its own thing."

"I'm glad they do that," said Swartz. "It gives us the opportunity to use our own forms, put them into a document control system, and pull them out for routine monitoring purposes." For companies unfamiliar with the ISO process, developing an effective strategy can be a strain on the company's resources. However, Swartz noted that the Internet is an excellent resource for generating ideas for new form development from individuals or entities interested in sharing their handiwork.

In EISENMANN's case, the cross-functional team charged with ISO documentation charted its own course for fulfilling its mission. Swartz says the first step was to nail down the company's environmental policy statement. "The policy publicly states the company's position on the environment and sets the overall expectations of its environmental program," Swartz said.

First, the team performed an affinity analysis, which Swartz described as a controlled, silent brainstorming session. Participants were asked the

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Congratulations to this year's newly elected Board of Directors.

Chair

Eric Boyd
Seyfarth Shaw

Vice-Chair - Programs

Diana Jagiella
Howard & Howard

Secretary

Robert Wells
Consultant

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Dale Kalina
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Mark Roach
Clean Air Engineering

Carol Schweiger
DUR-O-WAL

Tom Tramm
Consultant

Jeffrey Wentz
Baker Environmental, Inc.

It's TRI'in' Time Again...(con't.)

2. Has 10 or more full-time employees (or equivalent 20,000 man-hours/year); **and**,
3. Manufactures, processes, other otherwise uses any of the chemicals on the 313 list in amounts greater than the applicable threshold quantities.

If your facility exceeds the thresholds for both lead and lead compounds, you only have to prepare a single 313 Report - as you only have to report the quantity of the "parent metal" (lead) contained in the compounds, not the quantity of the lead compound released or otherwise managed.

The new rule also changes certain reporting exemptions and requirements for PBT chemicals, including eliminating the *de minimis* exemption, Form As, and range reporting. For non-PBT chemicals, the *de minimis* exemption allows facilities to disregard minimal concentrations of EPCRA 313 chemicals in mixtures or products they process or otherwise use in determining reporting thresholds. Except for the qualified alloys mentioned above, **all** amounts of lead and the metal portion of lead compounds must be included in determining reporting thresholds and in release and other waste management calculations.

Form A alternative reporting is also eliminated for PBT chemicals. Ordinarily, the shorter Form A can be used if a facility that exceeds an EPCRA 313 reporting threshold doesn't have more than 500 lbs. of total annual production-related waste, and doesn't produce, process, or otherwise use more than one million lbs. of that chemical. Once the Form A is completed, the facility doesn't have to file a Form R for that chemical, as long it doesn't exceed the 500/1 million-lbs. threshold. Facilities exceeding a PBT threshold must now complete the longer Form R reporting.

USEPA has also eliminated range reporting for PBT chemicals. USEPA allows range reporting for non-PBT chemicals if the facility's total annual releases or off-site transfers of an EPCRA 313 chemical are less than 1,000 lbs. Facilities can report amounts in Sections 5 and 6 of the Form R's Part II by "range codes" (A=0-10 lbs., B=11-499 lbs., and C=500-1,000 lbs.). Now, facilities have to report actual amounts of PBT chemicals released, including lead and lead compounds.

We hope this brief overview provides enough information for you to make at least a preliminary determination as to whether the revised requirements could now apply to your facility, and gives you a better idea of your reporting obligations. For more TRI information, including the chemicals and industries covered, reporting guidance, and more, call the EPCRA hotline at (800) 535-0202, or check out the TRI homepage at www.epa.gov/tri.

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- Surface Coating of Metal Furniture,
- Organic Liquids Distribution (Non-gasoline),
- Pesticide Active Ingredient Production,
- Miscellaneous Organic Chemical Manufacturing, and
- Miscellaneous Coating Manufacturing.

Final or proposed/direct final rules were filed for:

- Surface Coating of Metal Coil,
- Wet-formed Fiberglass Mat Production,
- Petroleum Refineries (Phase II: CCUs, CRUs, and SRUs),
- Pesticide Active Ingredient Production, and
- Leather Finishing.

And even that number understates the number of affected industries, as two of those proposed standards – the Miscellaneous Organic Chemical Manufacturing (MOCM) and Miscellaneous Coating Manufacturing (MCM) MACTs – began their regulatory development as the Miscellaneous Organic NESHAP (MON), which was intended to cover at least 23 process categories.

Note: the identification of rules proposed and issued is based on USEPA's date of filing, as indicated on their Office of Air and Radiation Policy and Guidance (OARP&G) web site (www.epa.gov/ttn/oarp/t3pfpr.html), not on the slightly different compilation on their air toxics web site (www.epa.gov/ttn/atw/), or dates of publication in the *Federal Register*. The signature and filing finalize USEPA's actions,

but it is the *Federal Register* publication date that determines the schedule of applicability.

Recent Proposals with Wide Applicability

Of these rules, the proposed Organic Liquids Distribution (OLD), and MON-based MOCM and MCM standards are the most far-reaching. In addition to dedicated facilities one would expect impacted, these will often apply to a limited subset of equipment and activities at a facility that may be covered by another MACT standard, or no other standard.

The OLD MACT (67 FR 15674, April 2, 2002) is proposed to apply to facilities that (1) are a Major Source of HAP and (2) handle over 7.29 million gal/yr of "organic liquids," which are defined as crude oil or liquids with ³ 5 percent of 69 HAPs listed in the rule (Table 1, 67 FR 15694). The rule is specifically intended to capture "organic liquids distribution operations that are collocated with other industrial ... operations" as well as dedicated facilities. The need for actually implementing control varies with tank size/loading rack volume and vapor pressure of the organic liquids. However, the applicability determination, testing, monitoring, record keeping, reporting, and data retention requirements will have more extensive impacts.

The proposed MOCM (67 FR 16154, April 4, 2002) standard applies to facilities that (1) are a Major Source of HAP, (2) operate one or more "miscellaneous organic chemical manufacturing process units (MPCU)," and (3) process,

produce, or use HAP. The definition of MPCU is very broad, including essentially all equipment in or supporting a process that produces a "material or family of materials" classified in SIC code 282 to 289 (plastics, resins, rubber, cellulose, drugs, soaps and detergents, paints and coatings, agricultural chemicals, adhesives, sealants, explosives, printing inks, carbon black, and several classes of "other"), plus SIC code 386 (photography supplies), plus certain ammonia compounds and "organic solvent recovery." The definition explicitly excludes equipment that is part of an "affected source" under an existing MACT standard or the MCM, but explicitly includes batch process vents at Hazardous Organic NESHAP (HON) sources.

The MCM (published with the MOCM) is more limited, applying to operations that (1) are part of Major Sources of HAP, (2) manufacture coatings and materials described in SIC codes 285 or 289, and (3) process, produce, or use HAP. As with the MOCM, the proposed standard explicitly excludes equipment that is part of an "affected source" under an existing MACT standard.

The applicability and required emission limitation for individual emission units under the MOCM are highly complex, with unit applicability thresholds and exceptions that can be very important. As a *general* summary, the standard requires 98 percent reduction or 20 ppmv TOC for both continuous and batch process vents,

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MACT Update (con't. from page 7)

with 95 percent reduction allowed for batch vents controlled with recovery devices (e.g. condensers), as well as for storage tank vents, and for halogens at halogenated vent streams controlled with combustion devices. Controls for wastewater systems, equipment leaks, closed-vent systems, and heat exchangers are based on MACT Subparts G, UU, SS, and F, respectively (i.e. the HON and "Generic MACT"). Existing units are proposed to be required to meet emission limits identical to new sources, except that applicability thresholds are less stringent for process vents and storage tanks, and will include fewer units.

MCM control requirements are similar to the MOCM. *Generally*, the standard requires 98 percent reduction or 20 ppmv TOC for exhaust vents on new process vessels, but limits requirements at existing facilities to 75 percent reduction for vents on stationary vessels and only covers for portable vessels. A 90 percent reduction for storage tank vents and 95 percent reduction for halogens at halogenated vent streams controlled with combustion devices is required. As with the MOCM sources, controls for wastewater systems, equipment leaks, closed-vent systems, and heat exchangers are based on MACT Subparts G, UU, SS, and F, respectively. Also as with the MOCM sources, the differences in requirements for new and existing units are primarily reflected in less stringent applicability thresholds for process vessels and storage tanks that reduces the number of units requiring control, with some

additional differentiation for process vessels.

As with previously proposed MACT standards, requirements with important impacts go beyond the required emission reductions, and are reflected in details that cannot be discussed extensively in this brief discussion. For *example*:

- Currently, emission limits are proposed to be applicable to cleaning steps in the process as well as manufacturing.
- As with other MACT standards that apply to a collection of facilities, determining which process units and ancillary equipment (e.g. storage tanks) are covered by the rule will be a major challenge.
- Implementation requirements such as testing of vent streams (vs. engineering analysis) and monitoring/reporting/recordkeeping provisions to demonstrate continuous compliance will have important impacts on the resources and cost for compliance.

Also, a *potentially* affected facility's HAP emissions inventory becomes more important with the proposed MOCM or MCM rules' potential applicability to a small group of equipment at a facility that is a major source of HAP because of other processes. Excessive conservatism in emission inventories or changes with evolving procedures for management of materials, as well as the definition of "potential emissions," may need to be reviewed.

Participating in the MACT Process

The operation of the MACT Hammer is adding pressure to the time frame to participate in rulemaking. Comments are open on the OLD MACT only until June 3, 2002. As of this writing, the original comment deadline for the MOCM and MCM standards had been extended until June 28, 2002. USEPA has specifically solicited comments on the proposal in a number of areas, and must consider all comments in setting the final standard.

The participation of all stakeholders is important for MACT standards such as the MON, especially for the potentially regulated community that will have special knowledge of the processes that USEPA may not. As both the MOCM and MCM proposed rules apply identical standards to so many processes using very different materials under different conditions, it seems likely that there are process-specific factors that are not fully accounted for in the standards.

For example, some facilities may be concerned with the lack of consideration for the feasibility and safety of controls for the wide range of processes covered. Setting the "MACT floor," or determining that "above the floor" controls are cost-effective, is often based on the performance of combustion-based controls. However, these controls may not be either feasible or safe if the process exhaust is highly variable or explosive, or both. This is of

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particular concern for batch processes. Safety problems discovered during implementation recently required a revision to the MACT standard for ethylene oxide sterilizers for that reason. Another point of potential sensitivity applies to the users of coatings, which may not anticipate being covered by this rule but may fit the definition of a coating manufacturer. USEPA does not intend to cover these facilities, but the rule as proposed may (Preamble section III(I)(2), 67 FR 16173).

Future Considerations

The pace of proposing and establishing MACT regulations will only increase if USEPA is to make good on their intention that no one will need to file an application for case-by-case MACT determination under CAAA Section 112(j). One of USEPA's air toxics web sites (www.epa.gov/ttn/atw/mactupd.html) lists 23 upcoming MACT standards as of April 30, some of which have had standards proposed in the past few weeks.

This translates to *one final standard per month* from now until May 15, 2004. Some of these MACT will have the potential to impact a large number of facilities, such as the MACTs for Boilers and Process Heaters and Miscellaneous Metal Parts (Surface Coating). Others will have a narrower impact, such as the Mercury Cell Chlor-Alkali MACT.

USEPA will be under tremendous pressure to issue standards quickly and preclude the submittal and review of the Section 112(j) Part 2 applications. Proactive participation will be required from all stakeholders in order to ensure timely enactment of reasonable regulations with achievable compliance provisions.

About the author: Mr. Wells is an environmental consultant with extensive experience in the implementation of air toxics controls for industry. He can be reached at 630-462-6864, or wellsrobertc@earthlink.net.

The Lake Michigan States Section is once again pleased to announce the winners of the annual Student Paper Competition.

1st Place	Sandeep Agnihotri
2nd Place	Suj-yi Lo and David Ramirez
3rd Place	Laurel Berman
4th Place	Pinar Kus
5th Place	Amy Carollo

Abstracts of the winning papers can be found on our website (www.lmawma.org). Please take a moment to check them out the next time you are on the web. These were excellent papers submitted by the next generation of environmental professionals.

The Board of Director also wishes to thank Peter Scheff for all his efforts in coordinating this program.

Member News

Wingra Engineering, S.C. is pleased to announce that **Steven Klafka** has been certified by the American Academy of Environmental Engineers, receiving the designation of Diplomate of Environmental Engineering or DEE. The certification process required nearly one year and included peer evaluation of his professional experience and examinations in the field of Air Pollution Control.

The American Academy of Environmental Engineers was established in 1955 to enable environmental engineering professionals to prove their competence in specialties of environmental practice. The certification program is restricted to licensed, professional engineers, and is accredited by the Council of Engineering and Scientific Specialty Boards.

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RAECO is pleased to announce that **Cathy Baker** has rejoined their organization as part of the inside customer support team.

Cathy originally served the RAECO customers in the mid-1990s, assisting them with process instrumentation.

She has continued to work in the instrumentation field, and now brings in-depth understanding of RAECO customers' needs and the resources we have to serve them.

Environmental Controls (con't. from page 5)

wide open question: “How does EISENMANN U.S. impact the environment?” Team members had five minutes to write their ideas—in silence—on post-it notes, one idea per note. (According to Swartz, an open forum at this juncture might have stifled creativity and an exchange of ideas.)

The responses were posted on a board and transformed into a cause-and-effect diagram. “That picture came out well,” concluded Swartz. “It became the basis of our environmental aspects, the things we needed to assess—mainly, how we impact the environment, good or bad.”

Each of the environmental aspects was then rated, based on the probability that an aspect might actually occur and the consequence of its occurrence. “Two columns are used, one for the probability and the other for the consequences of the particular aspect being studied,” Swartz said. “For probability, we might have five different areas we want to discuss or check, such as containment, human control, monitoring, frequency of incidents, and complaints. Under consequences, we might discuss five more: cost, damage, quantity, legal implications and community interest.”

The team gave numerical grades of high (3), medium (2) and low (1) to each area. Multiplying the sum of both columns provided the significance number for the aspect.

The EISENMANN team then moved on to assigning numbers rating the significance of each aspect. “Significant aspects could be recycling, wastewater treatment or power usage,” explained Swartz. “As we tallied up the grades, we broke down the totals into four ranges—from a low of 25 to a maximum of 225.”

An area that EISENMANN found to be of high significance with a score of 180 was the large quantity of excess packing material used when shipping a job. “When we looked at volume of packaging waste we generate when shipping a piece of equipment, we were surprised by the volume of waste material we were generating,” Swartz said. “We found we had a high probability of incidents where we used too much packing material. The consequences were a large cost to purchase this material, then we repeated that cost by consuming a lot of our dumpster space every week with the scrap material. Based on this survey, our shop manager has begun looking at ways he can retrain our employees to use less packaging material. We are also investigating whether our waste hauler will give us a separate dumpster for recycling this waste.”

Other aspects EISENMANN looked at were less significant, with oil waste scoring 100, refrigerant leaks in the HVAC system scoring a moderate 58, and waste paper disposal scoring a relatively low 30.

Setting Objectives and Targets

Once the team identified the most significant items on its list, it then set its priorities and moved ahead with writing objectives and targets.

Questions posed at this stage included:

- What are the environmental impacts the company wants to reduce?
- How will we do it?
- How do we itemize them?
- What steps are necessary?
- How will that take place?
- Who’s on the team?
- Who’s responsible for which tasks?
- What’s our target completion date?
- Who will measure and monitor progress?
- How do we document corrective action?
- When and how will we reassess our targets?
- Are our goals realistic and achievable?

The team’s assessment of EISENMANN’s in-house practices led to further study of recycling the wooden materials used to package its huge, oddly shaped industrial products. The purchase of a chipper would reduce the amount of wood sent to landfills. Office paper recycling and water usage for paint pretreatment, drinking and bathroom systems are also being studied. The volumes of paperwork generated by EISENMANN’s ISO 14001 team were pre-assessed by DNV Registrar’s Houston, Texas, office, and certification was expected by January 2002.

As more automotive manufacturers and other original equipment manufacturers (OEMs) begin requiring their suppliers to become ISO 14001 certified, a number of advanced ceramic manufacturers

Environmental Controls (con't. from page 5)

will find themselves facing a similar situation. However, according to Chris Pilko, a sales engineer at EISENMANN who works closely with the ceramic industry, the process is typically easy, and the benefits are well worth the effort. "Most companies are already doing enough to be ISO 14001 certified," he said. "They're already recycling as much as they can—material that used to go to a landfill is now being sold to someone else who will use it as grog. But by going through the process of applying for and achieving ISO 14001 certification, companies can often find ways to reduce their waste even further and become more efficient in their manufacturing operations, thereby benefiting the bottom line."

Increasing Environmental Awareness

In honor of the EISENMANN team's efforts and as a reminder of the firm's environmental commitment, a huge banner welcomes visitors to its facility and another hangs in its 110,000-square-foot plant. Both banners read: "We Practice Environmental CPR." The acronym stands for Conserving natural resources, Preventing pollution and Recycling.

John Swartz said it's an effective reminder. "When we hung up that banner in the shop, it drove home the point of why we're asking employees to shut off the machines when they're finished, to recycle any scrap steel, toss their coffee cups and soft drink cans in the recycle bins. It also spurred other staffers to become more involved in our paper and package recycling efforts."

The banner is also symbolic of EISENMANN's latest effort to persuade its hundreds of North American suppliers to register for ISO 14001. A recent letter encourages suppliers "to develop and implement their own program of environmental preservation." Swartz denies it's a case of corporate strong-arming. "I would venture to guess the majority of our suppliers are aware of ISO 14001. They may not be registered, but they may be compliant. They just haven't registered for the shingle. Will this scare them? No, I don't think so.

"We're sending out a message to our suppliers: 'Jump in, the water's fine. It doesn't hurt. You're doing a good thing by becoming more aware of your surroundings. It's really not all that hard.'"

Swartz said half the battle is overcoming an outdated mind set. "We're not tree-huggers. We are just taking care of our little place on earth, taking care of the people who work in and around our facility, and being good neighbors. If, in the end, our customers and other industries see us as an environmental steward, that's just an added bonus."

For More Information

For more information about EISENMANN or ISO 14001 certification, contact Chris Pilko or John Swartz at EISENMANN Corp. at 150 E. Dartmoor Dr., Crystal Lake, IL 60014; (815) 455-4100; fax (815) 455-1018; e-mail or john.swartz@EISENMANN.com; or visit www.EISENMANN.com. More information about ISO 14001 certification can also be found online at www.iso.org.



Carmeuse North America is seeking a Environmental & Safety Manager based in Chicago, IL. Candidate needs to have 3+ years experience in the environmental and safety field, Bachelor of Science Degree, experience in managing, implementing and maintaining environmental and safety compliance along with experience interacting with regulatory officials (EPA & MSHA) and implementing corporate risk management programs.

Please e-mail resume with salary history to resumes@carmeusena.com and include R195 in the subject line.

If your firm would like to place a help wanted ad in the next issue of the LM-A&WMA newsletter, please contact Robin Pelsis at (847) 202-0418 or e-mail her at lm_awma@ameritech.net for exact specifications and deadlines.





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LM-A&WMA has been working to update its website. Check us out at www.lmawma.org

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